

**METHOD AND APPARATUS FOR ALLOCATING ENTRIES IN A
BRANCH TARGET BUFFER**

5

Abstract of the Disclosure

A method (200) and apparatus (100) for allocating entries in a branch target buffer (BTB) (144) in a pipelined data processing system includes: sequentially fetching instructions; determining that one of the instructions is a
10 branch instruction (210, 215, 220); decoding the branch instruction to determine a branch target address; determining if the branch target address can be obtained without causing a stall condition in the pipelined data processing system; and selectively allocating an entry of the BTB (144) based on the determination. In one embodiment, an entry of the BTB (144) is allocated if the
15 branch instruction is not loaded into a predetermined slot (S1) of a prefetch buffer (102) and no other stall condition will occur. The method (200) and apparatus (100) combine the advantages of using a BTB (144) and branch lookahead to reduce stall conditions in the data processing system.

20